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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/599,286

09/25/2006

Yasushi Dodo

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GRIFFIN & SZIPL, PC

SUITE PH-1

2300 NINTH STREET, SOUTH

ARLINGTON, VA 22204

EXAMINER

HARP, WILLIAM RAY

ART UNIT

PAPER NUMBER

4174

MAIL DATE

DELIVERY MODE

07/09/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/599,286	Applicant(s) DODO ET AL.	
	Examiner William R. Harp	Art Unit 4174	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-14 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/25/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) was submitted on September 25, 2006. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims **10 and 12** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim recites that the actuators are merely "arranged," but fails to recite in what manner the actuators are arranged.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims **1-3, 8, and 12-14** are rejected under 35 U.S.C. 102(b) as being anticipated by Hofele et al. (USPN 5842370).

6. Regarding Claim 1, Hofele et al. teaches a panel carrying device (41 in Figure 3) comprising: a panel holding device (46 and 47 in Figure 3); a second link mechanism (58 in Figure 6) connected to the panel holding device (through element 53 illustrated in Figure 5); a

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first link mechanism (57 in Figure 6) pivotally fitted to the second link mechanism; a slide mechanism (77 & 61, 78 & 62, 94 in Figure 5) which moves the first link mechanism in a panel carrying direction; and a swing mechanism (77 & 61, 78 & 62, 94 in Figure 5) which swings the second link mechanism. The action of elements 77, 78, and 94 cause the first link mechanism 57 to be moved in the panel carrying direction as illustrated in Figure 6 and causes the second link mechanism to be swung (the center of mass of the link would follow an arcing path through its movement) [C6, L17-37].

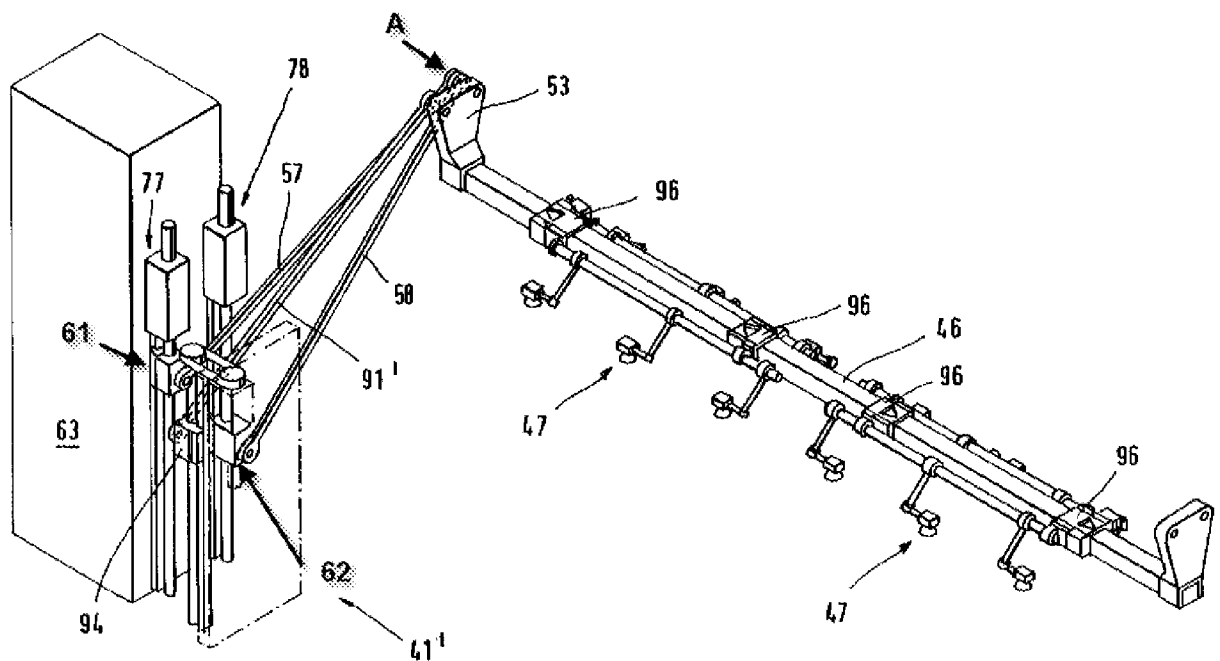


FIG. 5

7.

8. Regarding Claim 2, Hofele et al. teaches pairs of link mechanisms, slide and swing mechanisms on opposite sides of the panel holding device arranged symmetrically with respect to each other (Figure 3).

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9. Regarding Claim 3, Hofele et al. teaches an output member (53 in Figure 3) connected to the panel holding device. Hofele et al. further teaches two arms (58 and 91 in Figure 3) which constitute a parallel link connected to a slide (62 in Figure 3). The portion (B in Figure 3) of slide (62) is considered to be an intermediate member.

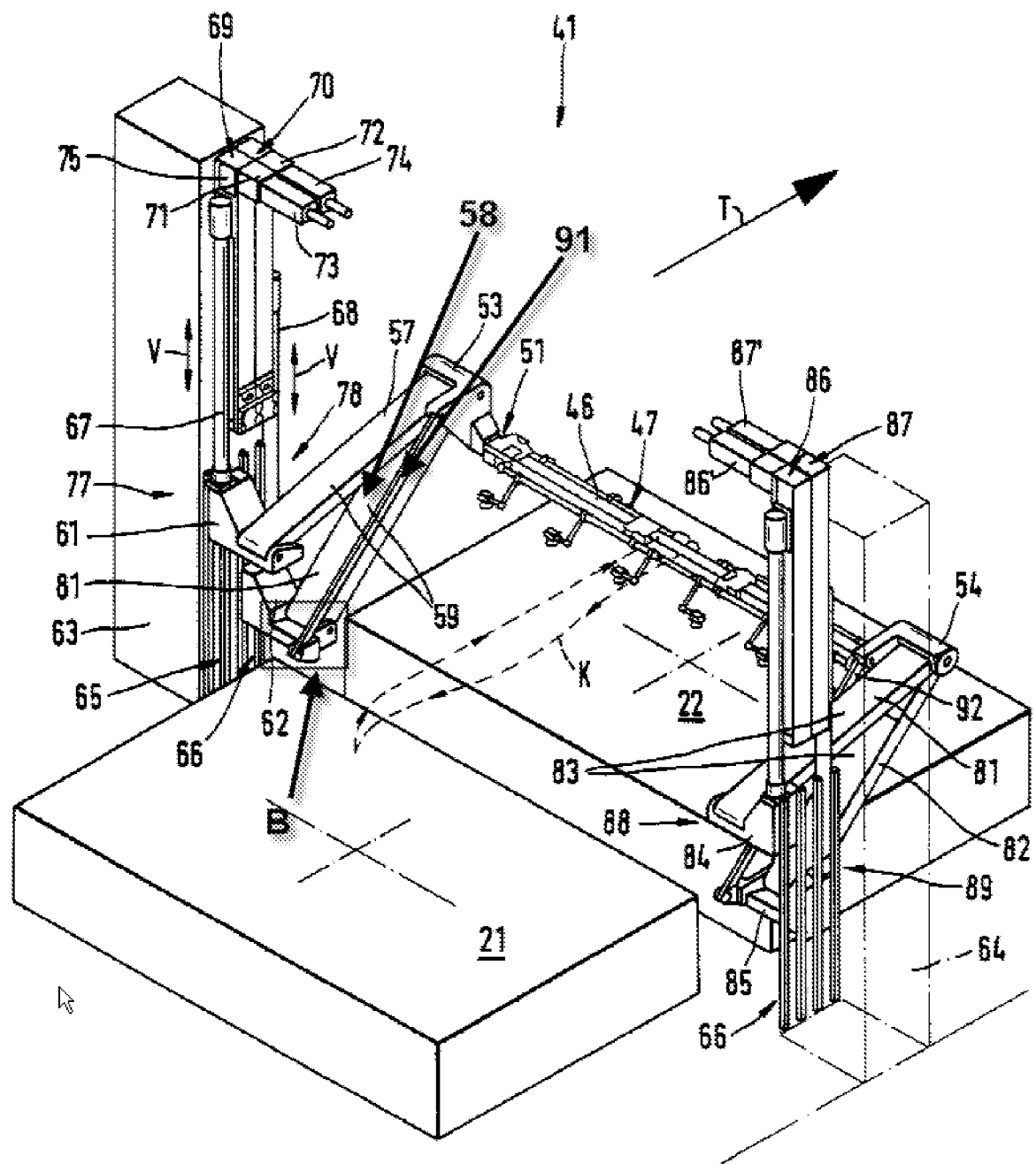


FIG. 3

10.

11. Regarding Claim 8, the first and second link mechanisms are pivotally fitted at Point A in Figure 5 of Hofele et al. to each other and member (53). The translatable actuator (78) causes the

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links to swing; therefore, the examiner considers the combination to be a swinging link mechanism.

12. Regarding Claim 12, Hofele et al. teaches that the actuators are arranged, which would meet the limitation of Claim 12.

13. Regarding Claim 13, Hofele et al. teaches the actuators (77, 78) may be hydraulic cylinders (hydraulic) or electric drives or that servo motors may be provided as electric drive units to generate linear movement through a ball screw and a ball nut (spindle-type elevating gearing), timing belts (a belt gearing), or a rack and pinion (a toothed rack). Also linear motors may be used [C3, L5-12].

14. Regarding Claim 14, Hofele et al. teaches a cross bar (46) connected to the second link mechanism (through member 53) and a work holding tool (47) attached to the cross bar.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

17. Claims **4-6 and 9-11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hofele et al. view of Terpstra (USPN 6428267) and Smith, Jr. et al. (USPN 4345864).

18. Regarding Claim 4, Hofele et al. teaches the panel carrying device of Claim 3. Figure 3 of Hofele et al. illustrates that the intermediate member is attached to the slide (62). Hofele et al. fails to teach two arms connecting the intermediate member to the slide mechanism.

19. Terpstra teaches a slide mechanism (20a and 20b in Figure 1). Terpstra further teaches a parallel linkage (30a and 30b in Figure 1) connecting a member (40 in Figure 1) to the slide (20a). The examiner considers the linkages to be arms. The slides (20a and 20b), when brought together, cause the member (40) to lower, and when spread apart, cause the member to rise, as illustrated in Figures 4A-4F. Further, movement of the slides in the same direction causes horizontal translation to occur. From an axis attached to the member, the linkages (30a, 30b, and 30c) would have a rotational component with respect to the member.

20. Smith, Jr. et al. teaches an output member (101 in Figure 1), an intermediate member (89 in Figure 1), parallel linkages connecting the output member to the intermediate member (link 99 and a portion of arm 87 in Figure 1), and parallel linkages (93 and 95 in Figure 1) connecting the intermediate member to a trolley (23 in Figure 1). The lower portion of arm (87) is connected to dolly (67) which rides on a threaded shaft. Movement of the dolly along the shaft causes the output member to move in the horizontal direction as can be determined from Figure 1. Further, if viewed from an axis attached to the intermediate member (99), the linkages (93, 95, and 87) have a rotational component with respect to the member.

21. Parallel linkages are well-known and their movement is predictable through the principles of kinematics. It would have been obvious to one of ordinary skill to connect the slide

mechanism to an intermediate member through a parallel linkage to produce controlled movement of the intermediate member. One of ordinary skill would be able to predict from the movement of the linkages as shown in Terpstra and Smith, Jr. et al. the movements of similar linkages, regardless of their configuration.

22. Regarding Claim 5, Hofele et al. teaches the device of Claim 1. Hofele further teaches a feed slide (62) to which a link is pivotally fitted (illustrated in both Figures 3 and Figures 5) as well as a translatory actuator (78 in Figure 5) which drives the feed slide.

23. However, Hofele et al. fails to teach that the translatory actuator drives the feed slide in the carrying direction of the panel.

24. Terpstra teaches the feed slides (20a and 20b) which comprise translatory actuators (22 in Figure 1) and, as illustrated in Figures 4A-4F, do travel in the carrying direction of the part.

25. Since the elements shown in Hofele et al. and Terpstra, specifically the slides and linkages, are well-known, and it has been held that rearranging parts of an invention involves only routine skill in the art (*In re Japikse*, 86 USPQ 70), it would have been obvious to modify the invention of Hofele et al. such that the feed slides are driven in the panel carrying direction to carry a part with dimensions larger than the width of the transfer device.

26. Regarding Claim 6, Hofele et al. teaches the slide mechanism as described above, however, fails to teach that the two arms of the first link mechanism remain parallel during the movement of the slide mechanism.

27. Terpstra et al. teaches the slide mechanism as described above as well as the parallel linkages. During the movement of slide (20a), the linkages (30a and 30b) remain parallel to one another.

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28. From kinematics, it can be reasoned that if the linkages were not kept parallel, the member (40) would tilt, therefore it would have been obvious to keep the arms parallel to one another in order to ensure that the member does not tilt.

29. Regarding Claim 9, Hofele et al. teaches the panel carrying device according to Claim 8. Hofele et al. further teaches the translatory actuator (78) and a swing slide (62), however, fails to teach that the swing slide is driven in the panel carrying direction.

30. It has been shown above in Terpstra that the actuators and slides can be arranged such that the slides move in the carrying direction

31. Therefore, since it has been held that rearranging parts of an invention involves only routine skill in the art (*In re Japikse*, 86 USPQ 70), it would have been obvious to modify the invention of Hofele et al. such that the feed slides are driven in the panel carrying direction to carry a part with dimensions larger than the width of the transfer device.

32. Regarding Claim 10, Hofele et al. further teaches that the actuators are arranged, which would meet the limitation of Claim 10.

33. Regarding Claim 11, Hofele et al. further teaches the actuators (77, 78) may be hydraulic cylinders (hydraulic) or electric drives or that servo motors may be provided as electric drive units to generate linear movement through a ball screw and a ball nut (spindle-type elevating gearing), timing belts (a belt gearing), or a rack and pinion (a toothed rack). Also linear motors may be used [C3, L5-12].

Allowable Subject Matter

34. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

35. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art made of record is directed to parallel linkage mechanisms and transfer devices.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William R. Harp whose telephone number is (571) 270-5386. The examiner can normally be reached on Monday - Thursday, 8:30 AM - 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly D. Nguyen can be reached on (571) 272-2402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/W. R. H./
Examiner, Art Unit 4174

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Primary Examiner, Art Unit 2885